

## New Data on Taxonomy of the Rhopalocera of Sharr Mountain and its Surroundings (Mavrovo and Pollog Valley)

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**Abstract:** *In this work project there are presented the final finds of a three year long work (March through October of years 2011, 2012, 2013) on “final taxonomic estimation of Rhopaloceroafauna of Sharr Mountain and its surroundings,” a period coinciding with the adulthood of rhopalocera. Considering the vast gradient of altitude from the Pollog Valley (380 m), all the way to the highest peaks, at Sharr Mountain (2748 m) where almost all vegetative strips are represented. This voluminous study about this region was for its first time undertaken by us, and it was ignored by other local and foreign researchers, or they just did it casually. The study was concentrated at 5 stations at Pollog Valley, 11 at Sharr Mountain and 2 stations at Mavrovo National Park. The collection of scientific material was conducted starting in early spring, until late fall, using aerial entomologic nets and was preserved until its lift up, in entomologic envelopes and mattresses, with indicators referring to the collection spot, date, biotope, name of collector and notes about vegetal coating. This study resulted in collecting a rich material of about 2000 exemplars, part of which was picked up, designated and prepared for the creation of the scientific stockpile, intended for the Biology Department of the State University of Tetova. Based on the overall fauna analysis so far, it results that this material has defined 152 species, belonging to 72 kinds and 6 families. Compared to the European rhopaloceroafauna (482 species), (EU–441 species) known so far and the Macedonian one (201 species), that of Sharr Massif (152 species), it makes up 36% and 76% of them, respectively, thing that indicates the rich composition of the rhopaloceroafauna species of this massif, compared to their respective area they occupy. Considering this evidence, we can state that the Sharr Mountain and its surroundings’ Rhopaloceroafauna accounts for a very rich and diversified habitat considering the fauna aspect*

**Key words:** *Rhopaloceroafauna, species composition, distribution, Sharr Mountain, Mavrovo, Macedonia*

### Introduction

Rhopaloceroafauna (Lepidoptera, Rhopalocera), what purpose this study was undertaken for, represents a scientific, practical and environmental interest. Also known as “flying flowers,” the rhopalocera or diurnal butterflies, account for the most distinctive group of the Lepidoptera collection, collection with 174,250 species (15), grouped into 126 families (16). Today, there are around 15,000 types of diurnal butterflies (Rhopalocera, Diurna) in the world, while Europe has 482. About the Macedonian lepidopterofauna in general, we know from the works of two Austrians: Dr. Hanz Rebel (7) and Josef Thurner (11), and furthermore, studies from Scheider P., P. Jakšič, (8), Meloski D. (13), Krpač & Co., (4). In the latest edition (2008, Krpač V.T. & Co.) 201 types are reported for Macedonia. Till now, we don’t know of any individual Macedonian fauna studies on rhopaloceroafauna of Sharr Mountain Massif and its surroundings. These authors’ researches have left out of the observation the rhopaloceroafauna of our research area.

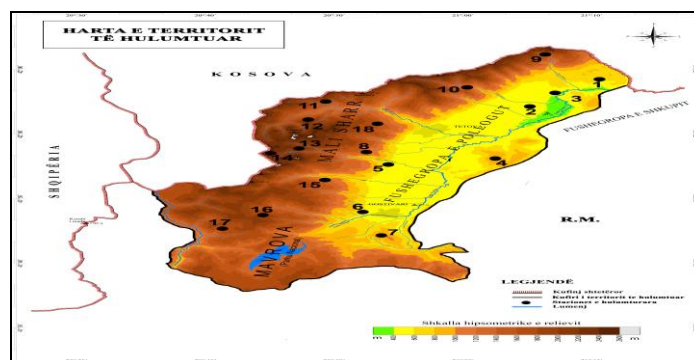


Image 1. Map of explored area (Sharr Mountain, Pollog Valley, Mavrovo National Park) within the Republic of Macedonia territory. Station names as part of the explored territory have been marked with black dots and numbers, (1-18). 1. Jazhince, 2. Persheve – Jegunovce, 3. Nerashte, 4. Radiovce – Stençe, 5. Pirok, 6. Raven, 7. Llakovica, 8. Kamenjane – Jellovjan, 9. Luboten, 10. Tearce – Jelloshnik, 11. Brodec – Veshalla, 12. Popova Shapka (Kodra e Diellit), 13. Rakovec – Bistravec, 14. Black Lake, 15. Negotino – Llomnica, 16. Mavrovo – Radika, 17. Mavrovo – Bistra, 18. Gajre – Lisec.

Our study, as State University of Tetova employees, is the first of a kind in the context of identifying and studying the rhopalocero fauna of Macedonia for this region and is based on accumulated and analyzed factual material, in a general systematical and ecological way. This work will contribute to more thoroughly recognize the Macedonian lepidoptero fauna, in general. The area explored by us, considering its extension as a part of the territory, is named as the Northwestern area of Macedonia. Most of this region is made up of Sharr mountains and Bistra area, (Images 2, 3), whereas a smaller area, by the Pollog Valley (Image 1). Our three yearlong study started in early spring of 2011, until late fall (March – October) of 2013, and is closely related only to the period of adulthood phase of the rhopalocera. We started at a lower valley area, such as the Pollog Valley at an altitude of 475 m – 800 m. This area is rich in both wild and cultivated vegetation. Further, it extends onto the mountainous area (Sharr Mountain, Mavrovo) from 800 – 1200 m with little cultivated vegetation and more spontaneous vegetation, consisting of grasses, bushes and forest trees. Higher, from the forest strip it extends onto the subalpine area from 1200 – 2100 m, area that is covered mainly in grassy vegetation and bushes, usually pineal. And last, the alpine area 2100 – 2700 m makes up the highest vegetative area and extends over to the upper frontier of the bushy coverage.

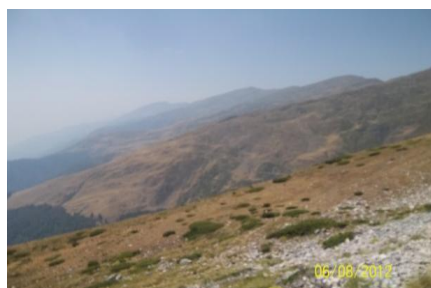


Image 2. Mountain Massif of Sharr Mountain



Image 3. Mavrovo (Bistra – Galičnik) (Luboten)

Sharr Mountain lies at the bottom Northwestern part of Republic of Macedonia. It represents the largest and highest mountain massif of Macedonia, with the Tito Peak (Turčin) 2748 m high. As its peculiarity,

we have many ridged mountain peaks at a length of 80 km and a width of 10 – 20 km. The total size of the Macedonian part of Sharr Mountain is 840.2 km<sup>2</sup>, 693.9 km<sup>2</sup> of which lie at an altitude of over 1000 m, whereas the rest of it, 1.588 km<sup>2</sup> lie at over 2000 m above sea level (18). It is divided by the River Shkumbin Valley into two basic morphological whole parts, which are: the northeastern part, Luboten, Crni Vrv, etc., (Sharr at a closer meaning) and the southwestern part (Vraca, Rudoka, up to Bistra).

The life activity of rhopalocera is closely related to the climatic conditions, as well. For our area of study, we come across three main climatic types: the Mediterranean inconsistent climate, the Continental median climate and the Mountainous climate. (14) After a preparatory acquaintance with the area of study and its climate – terrain traits and conditions, we picked out and concentrated our study on 7 stations at the Pollog Valley, 11 stations at Sharr Mountain and 2 at the National Park Mavrovo.

### Material and method

The material was collected using aerial entomological nets of soft and transparent, colorless cloths, that enabled us to finely see the object inside the net.

The soft material has allowed the butterflies to not get hurt during their entrapment. Net's dimensions were based on recommended literature, with a ringed inlet of 50 cm in diameter, a 70 cm deep bag and a 120 cm long pole. For an easier transportation,



Image 4. Collection of material at the location



Image 5. Arrangement of material (entomologic mattress, envelopes, bags)

Image 6. Camera, Altimeter – GPS, Dissection tools



Image 7. Exicator butterfly softening dish



we made the ringed inlet of the bag and the pole to be disassembled. This net of proper dimensions and quality has enabled us to collect qualitative materials (Image 4). Butterflies have been captured during their flight or standing on flowers, bushes and spontaneous vegetation. All the material has been labeled at the collection spot itself, with data referring to the collection spot, date of collection, biotope, name of collector, as well as specific notes on vegetation (grassy, bushy, woody).

After netting, the object has been enveloped and preserved until its lift up, in entomologic envelopes and mattresses prepared by us (Image 5). The collection period varied, depending on the altitude, beginning in the early spring, until late fall. Based on a calendar, we've done a seasonal survey of the stations included in the method of research. We've sorted out types of rhopalocera harmful to fruit tree and we've noted down their damage. Butterflies have been photographed on their favorite plants, linked-up to the life of larvae. Part of the material, about 2000 exemplars collected so far, has been picked up, labeled, designated and prepared for the creation of the scientific stockpile for the Biology Department of the University of Tetova. Prior to its preparation for lift up, the dried material has been softened in Exicator (Image 7).

## Results and discussions

The material to be studied has been collected from 18 stations, within a three year long period, during the months of March – October, of years 2011, 2012 and 2013, presented in (Tab. 1). From 18 explored stations, 5 of them belong to the Pollog Valley, 2 to the Mavrovo region and 11, to Sharr Mountain



Massif (Tab. 1). At every research station, data about the habitat characteristics, the altitude, GPS geographic positioning and date of material collection for fauna, have been gathered. This three year long project has resulted in accumulating over 2000 adult individuals (female and male) that we've conserved in the scientific stockpile of the Laboratory of the Department of Zoology of the Faculty of Natural Sciences – Tetovo. Determinations have been conducted at the Scientific Lab of the Museum of Natural Sciences in Skopje to the genitalia, using a stereomicroscope type Wild – M5A. The study of a part of adult individuals, gathered till now has resulted in defining 152 species, belonging to 72 kinds from 6 families (Tab. 2) of rhopalocera, counting for the largest number gathered so far, compared to other explorers for this area; H. Rebel 15 species, Thurner J. 92 species, Meloski D. 102 species, Jakšić P. 147 species. During the determination, we've not counted the number of subspecies, even though their number is not small in this area. All of this work of three years has resulted in presenting 3 new species for the area of research, even though known for the Republic of Macedonia region: 1. *Nymphalis xanthomelas*, Esper, 1781, 2. *Melitaea arduinna*, Esper, 1783, 3. *Melitaea aurelia*, Nicklerl, 1850.



Image 8. Photographing butterflies at location



1

Image 9. Building a collection of butterflies

Tab. 1. Names and data about Stations where the research has been conducted within the area, Sharr Mountain, Pollog Valley, Mavrovo. (R.M.)

Nr.	Stations(locations) investigated	Date, Month, Year	Geographic (Latitude)	Geographic (Longitude)	Height above the sea level (Altitude)	Description of habitat
1.	<b>Jazhincë- Orashje</b>	24.06.2012 25.06.2013	N 42 <sup>0</sup> 08' 66.15''	E 21 <sup>0</sup> 07' 67.72''	668 - 710m	Tableland and spontaneous herbaceous plants
2.	<b>Përshevc- Jegunovc</b>	27.07.2011 05.06.2012 05.08.2013	N 42 <sup>0</sup> 04'16.08''	E 21 <sup>0</sup> 05' 38.02''	475 - 434m	Field terrain, cultivated vegetation and wetlands
3.	<b>Nerashtë</b>	27.07.2011 05.06.2012 05.08.2013	N 42 <sup>0</sup> 04'16.08''	E 21 <sup>0</sup> 05' 38.02''	475 - 434m	Field terrain, cultivated vegetation and wetlands
4.	<b>Radiovc- Stençe</b>	29.04.2011 02.05.2012 10.06.2013 17.08.2013	N 41 <sup>0</sup> 52'07.84''	E 20 <sup>0</sup> 58' 56.98''	493 - 510m	River flow and cultivated vegetation
5.	<b>Pirok</b>	05.07.2011 22.07.2011 14.08.2012 03.04.2013	N 41 <sup>0</sup> 54'31.15''	E 20 <sup>0</sup> 52' 68.98''	610 – 635m	Outfall, hilly terrain
6.	<b>Raven</b>	18.07.2012 21.08.2013	N 41 <sup>0</sup> 46'30.66''	E 20 <sup>0</sup> 51' 46.32''	652- 659m	Field with the cultivated and spontaneous vegetation
7.	<b>Lakovicë</b>	30.06.2012 01.06.2013	N 41 <sup>0</sup> 44'46.82''	E 20 <sup>0</sup> 55' 29.69''	585 – 620m	Field with the cultivated and spontaneous vegetation - river flow.
8.	<b>Kamenjan – Jellovjan</b>	07.04.2011 30.07.2012 13.08.2013	N 41 <sup>0</sup> 57'35.14''	E 20 <sup>0</sup> 53' 45.32''	620 - 890m	Mountainous terrain with a wild and cultivated vegetation
9.	<b>Luboten</b>	06.08.2012	N 42 <sup>0</sup> 10'58.70''	E 21 <sup>0</sup> 08' 17.61''	1630 - 1945m	Alpine and the rocky zone
10.	<b>Tearcë- Jelloshnik</b>	25.06.2011 21.07.2012 24.09.2012 25.08.2013	N 42 <sup>0</sup> 05'41.58''	E 21 <sup>0</sup> 02'40.68''	679 - 810m	Mountainous terrain, outfall and spontaneous grassy vegetation
11.	<b>Brodec-Veshallë</b>	23.06.2012 27.08.2013	N 42 <sup>0</sup> 03'24.30''	E 20 <sup>0</sup> 30' 08.32''	950 - 1025m	River flow, spontaneous and cultivated vegetation

12.	<b>Kodra e Diellit (Popova Sapka)</b>	21.07.2011, 16.08.2012 15.08.2013	N 42° 00'56.73"	E 20° 54' 37.02"	1100 - 1546m	Mountain pastures and bushes
13	<b>Rakovec-Bistravec</b>	17.07.2011, 08.08.2012, 07.07.2013	N 41° 55'42.65"	E 20° 48' 24.79"	830 - 1650m	Field mainly with wild vegetation
14	<b>Liçeni i Zi</b>	11.08.2012	N 41° 55'36.95"	E 20° 45' 36.95"	2122m	Alpine, rocky region and pastures.
15.	<b>Negotinë-Llomnicë</b>	02.06.2011 03.06.2011 29.06.2012 12.08.2013	N 41° 53'56.78"	E 20° 52' 32.77"	720 - 925m	Mountainous terrain, outfall (herb and forest)
16.	<b>Mavrovë-Radikë</b>	05.05.2011 20.06.2012 18.08.2013	N 41° 42' 06.72"	20° 45' 26.32"	1011m	Outfall, herbaceous plants, forest
17.	<b>Mavrovë-Galiçnik</b>	01.09.2012, 08.09.2012	N 41° 35'37.12"	E 20° 40' 20.84"	1180 - 1305m	Mountains (grazing and quarrying)
18.	<b>Gajre-Lisec</b>	24.08.2012 06.07.2013	N 42°00'47.20"	E 20° 55'57.96"	1149m	Hilly terrain, spontaneous and cultivated vegetation

Tab. 2. Families, kinds and species of predetermined rhopalocera and the venues at the stations of Sharr Mountain, Pollog Valley, Mavrovo

Nr.	Family/ genus	Species	Species Venue (stations 1-18)
I.	<b>HESPERIIDAE</b>		
	1. <i>Erynnis</i> Schr.,1801	1. <i>E. tages</i> L.	2, 3, 5, 7, 8, 10, 12, 15, 16
	2. <i>Carcharodus</i> Hbn.,1819	2. <i>C. alceae</i> Esp.	1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 16, 17, 18
	-	3. <i>C. flocciferus</i> Zell.	5
	3. <i>Spialia</i> Swinh.,1912	4. <i>S. phlomidis</i> Herr&Sch.	1, 7
	-	5. <i>S. orbifer</i> Hüb.	5, 7, 8, 10,11,12
	4. <i>Pyrgus</i> Hbn.,1819	6. <i>P. malvae</i> L.	1, 3, 4, 5, 7, 10, 11, 12, 15, 16
	-	7. <i>P. armoricanus</i> Oberth.	1, 2, 3, 5, 8, 12, 13, 15r, 16, 18
	-	9. <i>P. alveus</i> Hbn.	12, 13, 15
	-	10. <i>P. sidae</i> Esper	2, 5, 10
	-	11. <i>P. serratulae</i> Ramb.	8, 10,15,17,18
	-	12. <i>P. andromedae</i> Wallen.	13
	-	13. <i>P. carthami</i> Hüb.	12,13
	-	14. <i>P. cinarea</i> Ramb	1
	5. <i>Thymelicus</i> Hbn,1819	15. <i>Th. sylvestris</i> Poda.	1, 3, 10

	-	16. <i>Th. lineolus</i> Ochs.	1, 3, 10
	6. <i>Hesperia</i> Fabr.,1793	17. <i>H. comma</i> L.	5, 6, 9, 10, 12, 13, 17
	7. <i>Ochlodes</i> Scudd.1872	18. <i>O. venatus</i> Brem & Gr.	5, 10, 12, 13,
II.	<b>PAPILIONIDAE</b>		
	8. <i>Parnassius</i> Lat.1804	1. <i>P. mnemosyne</i> L.	5, 11, 13, 17
	-	2. <i>P. Apollo</i> L.	9, 11
	9. <i>Zerynthia</i> Ochs.1816	3. <i>Z. cerisy</i> Godr.	2, 3, 4, 5,
	-	4. <i>Z. polyxena</i> D&Sch.	2,3,4,5
	10. <i>Iphiclides</i> Hbn.1819	5. <i>I. podalirius</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15,16, 17,18
	11. <i>Papilio</i> L.,1758	6. <i>P. machaon</i> L.	1, 2, 3, 7, 13
III.	<b>PIERIDAE</b>		
	12. <i>Leptidea</i> Billb.	1. <i>L. sinapis</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 15, 16, 18
	-	2. <i>L. duponcheli</i> Staud.	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15., 16, 17, 18
	13. <i>Aporia</i> Hbn.,1819	3. <i>A. crataegi</i> L.	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15., 16, 17, 18
	14. <i>Pieris</i> Schrk.,1801	4. <i>P. brassicae</i> L.	2, 3, 4, 5, 6, 7, 8, 10, 11,12, 13, 15, 16, 17, 18,
	-	5. <i>P. rapae</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12,13, 15, 16, 17, 18
	-	6. <i>P. manni</i> Mayer	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 15, 18
	-	7. <i>P. napi</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18
	-	8. <i>P. krueperi</i> Staud.	1
	-	9. <i>P. balcana</i> Lork.	1,2
	-	10. <i>P. ergane</i> Geyer	10,11, 12
	15. <i>Pontia</i> Fabr.,1807	11. <i>P. edusa</i> L.	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18
	16. <i>Anthocaris</i> Boisd.,1883	12. <i>A. cardamines</i> L.	4, 5, 11, 15, 16
	-	13. <i>A. gruneri</i> H & Sch.	4
	17. <i>Colias</i> Fabr.,1807	14. <i>C. crocea</i> Fourc.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15,16, 17,18
	-	15. <i>Colias alfacariensis</i> Rib.	
	18. <i>Gonepteryx</i> Leach,1815	16. <i>G. rhamni</i> L.	1, 2, 3, 4, 5, 8, 10, 13, 14
IV.	<b>LYCAENIDAE</b>		
	19. <i>Thecla</i> Fabr.,1807	1. <i>Th. betulae</i> L.	10, 13, 16
	20. <i>Satyrium</i> Sc.,1876	2. <i>S. ilicis</i> Esp.	5, 8, 15
	-	3. <i>S. w-album</i> Knoch	13, 15
	-	4. <i>S. pruni</i> L.	13
	-	5. <i>S. spini</i> D & Sch.	15
	-	6. <i>S. acaciae</i> Fabr.	1,2,3,4,5,6,7,8 10,11,12, 13, 15,
	21. <i>Callophrys</i> Bill.1820	7. <i>C. rubi</i> L.	3, 4, 5, 8, 10, 11, 13, 16
	22. <i>Lycaena</i> Fabr.,1807	8. <i>L. phlaeas</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 16, 17, 18
	-	9. <i>L. virgaurea</i> L.	8, 9, 10, 12, 13, 14, 16, 17
	-	10. <i>L. tityrus</i> Poda.	5, 6, 7, 8, 10, 11, 12, 15, 16, 17
	-	11. <i>L. alciphron</i> Rott.	2, 3, 7, 8, 10, 11, 13, 15, 16
	-	12. <i>L. dispar</i> Haw.	3, 4, 5, 7, 8, 10, 11, 12, 13, 15, 16



-	13. <i>L. thersamon</i> Esp.	2, 3, 4, 5, 6, 7, 8, 10, 11,
-	14. <i>L. candens</i> H& Sch.	12, 13.
23. <i>Lampides</i> , Hüb,1767.	15. <i>L. boeticus</i> L.	5
24. <i>Leptotes</i> Scudd.1767	16. <i>L. pirithous</i> L.	2, 3, 4, 5, 6, 8, 10, 13, 15
25. <i>Cupido</i> Schrk.1801	17. <i>C. minimus</i> Fuessl.	1, 3, 5, 6, 10, 12, 15, 17
	18. <i>C. osiris</i> Meig.	2, 3, 4, 5.
26. <i>Everes</i> Hübner,1819	19. <i>E. argiades</i> Pallas	5, 7, 8, 9,
	20. <i>E. decolorata</i> Staud.	1, 2, 3, 5, 6, 7, 10, 11, 12
	21. <i>E. alcetas</i> Hoffm.	4, 8,
27. <i>Celastrina</i> Tutt.1907	22. <i>C. argiolus</i> L.	2, 3, 4, 5, 6, 7, 10, 11, 12, 14, 15, 16
28. <i>Glaucopsyche</i> Scud.1872	23. <i>G. alexis</i> Poda	10, 11, 15, 16
29. <i>Maculinea</i> Eck.1915	24. <i>M. arion</i> L.	15, 16
30. <i>Iolana</i> Baker,1914	25. <i>I. iolas</i> Ochsen.	15
31. <i>Pseudophilotes</i> Beur.,	26. <i>P. vicrama</i> Moore	5, 7, 15
32. <i>Scolitantides</i> Hbn.1819	27. <i>S. orion</i> Pallas.	7, 11, 15, 16
33. <i>Cyaniris</i> Dalm.1816	28. <i>C. semiargus</i> Rott.	1, 3, 4, 7, 10, 11, 12, 15, 16
34. <i>Polyommatus</i> Latr.1804	29. <i>P. ripartii</i> Freyer.	4, 13
-	30. <i>P. damon</i> D&Sch.	9,15, 16,17
-	31. <i>P. amanda</i> Scheid.	3, 15, 16
-	32. <i>P. eroides</i> Friv.	18
-	33. <i>P. thersites</i> Cant.	15, 16
-	34. <i>P. icarus</i> Rottemb.	1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,18
-	35. <i>P. coridon</i> Poda	
-	36. <i>P. bellargus</i> Rott.	3, 5, 6, 7, 11, 12, 14, 15, 16, 17
-	37. <i>P. daphnis</i> Den&Rott.	15, 16
35. <i>Agrodiaetus</i> Hüb.1822	38. <i>A. admetus</i> Esper	1.
36. <i>Aricia</i> Reichen.1817	39. <i>A. agestis</i> Den. &Schff.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18
-	40. <i>A. artaxerxes</i> Fabr.	10, 13
-	41. <i>A. anteros</i> Freyer	5, 7, 10, 11, 13, 16,17
37. <i>Plebejus</i> Kluk.1870	42. <i>P. argyrognomon</i> L.	13
-	43. <i>P. argus</i> L.	1, 3, 6, 10, 11, 12, 15, 16, 17, 18
-	44. <i>P. idas</i> L.	1, 2, 3, 10, 12, 15, 16, 17
38. <i>Plebejides</i> Saut,1968	45. <i>P. pylaon</i> F&W.	5, 15,
39. <i>Neozephyrus</i> Sabat. &Ito,1942	46. <i>N. quercus</i> L.	5
<b>V. RIODINIDAE</b>		
40. <i>Hamearis</i> Hüb. 1817	1. <i>H. lucina</i> L.	2, 10,13
<b>VI. NYMPHALIDAE</b>		
41. <i>Pararge</i> Hüb.,1819	1. <i>P. aegeria</i> L.	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17
42. <i>Lasiommata</i> W.1841	2. <i>L. megera</i> L.	2, 3, 5, 8, 9,10, 11
-	3. <i>L. maera</i> L.	9, 10, 11, 12
-	4. <i>L. petropolitana</i> Fabr.	9,12
43. <i>Coenonympha</i> Hüb.1819	5. <i>C. arcania</i> L.	5, 12, 13
-	6. <i>C. pamphilus</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 9,10,11,12,13,15,16, 17, 18
-	7. <i>C. rhodopensis</i> Elves.	9,12, 13, 14

-	8. <i>C. glycerion</i> Borkh.	5, 7, 11, 12, 13, 15, 16.
-	9. <i>C. leander</i> Esper	5, 8, 9, 10, 11.
44. <i>Pyronia</i> Hüb., 1819	10. <i>P. tithonus</i> L.	2, 4, 5, 8, 10, 12
45. <i>Aphantopus</i> Wall., 1753	11. <i>A. hyperantus</i> L.	2, 8, 10, 12, 13
46. <i>Hyponephele</i> Musch., 1915	12. <i>H. lycaon</i> Rott.	9, 13, 14
-	13. <i>H. lupina</i> Costa.	7, 8, 10, 11, 12, 13
47. <i>Maniola</i> Schrk. 1801	14. <i>M. jurtina</i> L.	1. . . 18
48. <i>Erebia</i> Dalm. 1816	15. <i>E. euryale</i> Esper.	12, 13
-	16. <i>E. ligea</i> L.	13
-	17. <i>E. medusa</i> Den&Schiff.	13, 15, 16
-	18. <i>E. rhodopensis</i> Nich.	12, 13, 14
-	19. <i>E. cassioides</i> R. & H.	9, 12, 13, 14
-	20. <i>E. ottomana</i> Herr-Schff.	9, 12, 13, 14
-	21. <i>E. melas</i> Herbst	
-	22. <i>E. pronoe</i> Esper	13
-	23. <i>E. oeme</i> Hubn.	13, 14, 15, 16
49. <i>Melanargia</i> Meig. 1828	24. <i>M. galathea</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18
-	25. <i>M. larissa</i> Geyer	1, 2
50. <i>Brintesia</i> Fruh. 1911	26. <i>B. circe</i> Fabr.	6, 7, 16
51. <i>Arethusana</i> Lesse, 1951	27. <i>A. arethusana</i> Den&Schiff	1, 5, 6, 7, 9, 10, 11, 12, 13, 15, 17, 18
52. <i>Chazara</i> M., 1893	28. <i>Ch. briseis</i> L.	1, 17
53. <i>Apatura</i> Fabr. 1807	29. <i>A. ilia</i> Den&Schiff	2, 4, 5, 7, 10
-	30. <i>A. iris</i> L.	10, 5
54. <i>Neptis</i> Fabric, 1807	31. <i>N. sappho</i> Pall.	4, 5, 10
55. <i>Argynnis</i> Fabr. 1807	32. <i>A. paphia</i> L.	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 15, 16, 17, 18
-	33. <i>P. pandora</i> Den&Schiff	2, 6, 8, 10
-	34. <i>S. aglaja</i> L.	7, 8, 9, 11, 12, 13, 16
-	35. <i>F. adippe</i> Den&Schiff	8, 10, 13, 14, 15
-	36. <i>F. niobe</i> L.	3, 6, 10, 15
56. <i>Issoria</i> Hüb., 1819	37. <i>I. lathonia</i> L.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
57. <i>Brentis</i> Hüb., 1819	38. <i>B. daphne</i> D. & Sch.	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18
-	39. <i>B. hecate</i> D. & Sch.	5, 13, 16, 17
58. <i>Boloria</i> Moore, 1900	40. <i>B. pales</i> D. & S. ch.	13, 14, 15
-	41. <i>B. graeca</i> Staud.	14, 15
59. <i>Clossiana</i> R., 1920	42. <i>C. euphrosyne</i> L.	8, 17
-	43. <i>C. dia</i> L.	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18
60. <i>Limenitis</i> Fabr. 1807	44. <i>A. reducta</i> Staud.	2, 4, 5, 6, 8, 10, 15, 16
61. <i>Nymphalis</i> Kl., 1780	45. <i>N. polychloros</i> L.	4, 5, 10, 12, 13
-	46. <i>N. xanthomelas</i> Esper	2, 4
-	47. <i>N. antiopa</i> L.	5, 7, 10, 13, 14

62. <i>Inachis</i> Hüb.1819.	48. <i>I. io</i> L.	2, 4, 5, 10, 12, 13
63. <i>Vanessa</i> Fabr. 1807	49. <i>V. atalanta</i> L.	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18
-	50. <i>C. cardui</i> L.	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18
64. <i>Aglais</i> Dalm.1816	51. <i>A. urticae</i> L.	1, 2, 3, 4, 5, 9, 10, 11, 14, 15, 16
65. <i>Polygonia</i> Hüb.1819.	52. <i>P. c-album</i> L.	1, 2, 3, 4, 4, 6, 7, 8, 10, 11, 12, 13, 15, 15, 17, 18
66. <i>Melitaea</i> ,Fabr.1807	53. <i>M. cinxia</i> L.	8, 12, 16, 17
-	54. <i>M. trivia</i> D. & Sch.	3, 4, 8, 9, 11, 12, 13, 15
-	55. <i>C. phoebe</i> D. & Sch.	1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 16, 17
-	56. <i>M. arduinna</i> Esper	7
-	57. <i>M. aurelia</i> , Nickerl	7
-	58. <i>D. didyma</i> Esp.	1...18
67. <i>Mellicta</i> Billb.	59. <i>M. athalia</i> Rott.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 18
68. <i>Euphydryas</i> Scudd.1872	60. <i>E. aurinia</i> Rott.	16
69. <i>Araschnia</i> Hüb.1819	61. <i>A. levana</i> L.	4,5,10,15
70. <i>Hipparchia</i> Fabr. 1807	62. <i>H. volgensis</i> M-P.	1
-	63. <i>H. statilinus</i> Hufn.	5,7,15,18
71. <i>Kirinia</i> Moore,1893	64. <i>K. roxelana</i> Cram.	2,3,4,5, 8,10,11,13,
72. <i>Libythea</i> Fabr.,1807	65. <i>L. celtis</i> Laich.	2,4,10,12
Total; 72 genus	Total,152 types	18. Stations

## Conclusion

A partial processing of the collected material up to now, numbers 152 species, belonging to 72 kinds from 6 families of rhopalocera. These data indicate the existence of a rich rhopalocerofauna of Sharr Massif and its surroundings and a considerable analogy with the rest of rhopalocera of the Republic of Macedonia. Compared to the European rhopalocerofauna (482 species), (EU only – 441 species) known so far and that of Macedonia (201 species), the Sharr Massif one (152 species), makes up 36% of the European rhopalocerofauna, or compared to the Macedonian one, 76% of the Macedonian rhopalocerofauna belongs to this area, which covers only 1/10<sup>th</sup> of the total territory of R. Macedonia. Based on this impressive number of 152 species, we can state that this area possesses a very rich rhopalocerofauna resulting from diversified habitats (from 380 m, up to 2748 m) and yet the low pressure of the anthropogenic factor over this territory. The rhopalocera of Sharr Mountain and its surroundings nomenclature is based on that of authors, (10).

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